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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,639	04/01/2004	Masaya Adachi	A8319.0007/P007-A	7545
24998	7590	05/13/2005	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			ROY, SIKHA	
2101 L Street, NW			ART UNIT	
Washington, DC 20037			PAPER NUMBER	
			2879	

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/814,639

Applicant(s)

ADACHI ET AL.

Examiner

Sikha Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11, 14-23 and 25 is/are allowed.
- 6) ☒ Claim(s) 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The Amendment, filed on February 9, 2005 has been entered and overcomes the rejection of claims 1,3 and 6, under 35 U.S.C. § 103(a).

New claims 22-25 have been entered.

New Drawing submitted for Figs 11 and 19 have been entered and are approved by the examiner.

Claim Objections

Claim 24 is objected to because of the following informalities:

Claim 24 line 5 'color filters are disposed between said polarization separators' should be replaced with -- color filters are disposed between said polarization separators and said emissive layer--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 09-127885 to Asai and U. S. Patent 5,928,801 to Broer et al. and further in view of 'Cholesteric Reflectors with a Color Pattern' by Maurer, Kreuzer, Stohrer, SID 94 Digest pp 399-402.

Regarding claim 24, Asai discloses (Fig.1) a light emitting device comprising a reflective element 1 (reflecting metal cathode), an emissive layer 5, a phase plate 23 and a polarizer 11 formed in this order. Light emitted from the emissive layer includes wavelength range of 460-660 nm, and is directed towards the polarizer. The reflective element is a reflecting surface for reflecting perpendicularly incoming circularly polarized light into one with opposite direction of rotation.

In claim 24 Asai is silent about the polarization separator provided in between the emissive layer and the phase plate.

Broer et al. in analogous art of electroluminescent display system disclose (column 2 lines 14-31, column 5 lines 49-55 Fig.1) a polarization separator (reflective polarizer) 11 provided between the emissive layer 5 and phase plate 15. The light which is passed by the emissive layer and which will generally be unpolarized will be split up into two beam components having complementary states of polarization, one beam component will be passed by the separator and coupled out of the illumination system whereas the other component will be reflected back into the illumination system in which it will have a chance of being converted into light having desired state of polarization. Broer et al. further disclose (column 3 lines 21-37) when unpolarized light is incident on cholesteric polarizer, the circularly polarized beam component of the light matching the direction of the helix and whose wavelength matches the pitch of the helix of the chiral molecule of the polarizer layer will be reflected and other beam component will be passed, thus the layer has a polarizing effect in a limited wavelength range so that the polarized light will have a color conformity with this wavelength range. Hence selecting

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cholesteric polarizer for narrower wavelength range will result in light having wavelength narrower than that of the light emitted from the emissive layer and conforming to desired color. Broer et al. further note (column 3 lines 5-9) that a polarization separator (reflective polarizer) has the advantage that substantially no light is absorbed but the light originally having unwanted state of polarization is recuperated so that greater part can be converted into light having desired state of polarization providing enhanced light output and brightness.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include the polarization separator as taught by Broer et al. in between the emissive layer and the phase plate of the display device of Asai for producing light of wavelength narrower than that of the wavelength of the light from light emissive layer. This configuration also has the benefit that no light emitted from the emissive layer is absorbed, resulting in enhanced brightness of the display.

Regarding claim 24 Asai and Broer fail to exemplify color filters between the polarization separators for separately transmitting red light, green light and blue light.

Maurer et al. in pertinent field of cholesteric reflectors with color pattern disclose (page 399 abstract, introduction) polarization separators (cholesteric liquid crystals) can be patterned with different colors and different color filters can be used close to cholesteric liquid crystal polarizer for efficient emission of a particular color, and thus producing multicolor display.

Therefore it would have been obvious to one of ordinary skill in the art to include pattern-formed color filters for transmitting particular color corresponding to pattern-

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formed polarization separators of Asai and Broer et al. as suggested by Maurer et al. for producing multicolor display.

Allowable Subject Matter

Claims 1-11,14-23 and 25 are allowed over the prior art of record.

Regarding claims 1,3 and 6 the prior art of record alone or in combination fails to teach a light emitting device with all the limitations as claimed and particularly the limitation of polarization separators reflecting specific light components from both ambient and electrically stimulated light traveling from the emissive layer side and passing the remaining light wherein the remaining ambient light is absorbed and a component of the remaining stimulated light is transmitted by the polarizer.

Claims 2, 4 and 16 are allowable for the reasons given in claim 1 because of their dependency status from claim 1.

Claims 5 and 25 are allowable for the reasons given in claim 3 because of their dependency status from claim 3.

Claims 7-11 and 14,15,17-23 are allowable for the reasons given in claim 6 because of their dependency status from claim 6.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,566,156 to Sturm et al. discloses multi-color display can be realized by an organic white light emitter with patterned color filters.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S.R.

Sikha Roy
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Art Unit 2879

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